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Pub C1 d) determining whether the drug or drug candidate has a therapeutic or toxic effect on the cell.

2 22. The method of claim *1* 21, wherein the cell is a human cell.

3 23. The method cell of claim *2* 22, wherein the cell further comprises a selectable marker gene.

Pub C2 24. The method of claim 22, wherein the recombinant polynucleotide comprises a constitutive promoter.

B1 25. The method of claim 22, wherein the recombinant polynucleotide comprises an inducible promoter.

CM *6* 26. The method of claim *2* 22, wherein the cell is a liver cell.

7 27. The method of claim *6* 26, wherein the cell is a hepatocyte.

8 28. The method of claim *2* 22, wherein the cell is a nerve cell.

9 29. The method of claim *2* 28, wherein the cell is a glial cell, astrocyte, or oligodendrocyte.

10 30. The method of claim *2* 28, wherein the cell is a neuron of the central nervous system.

11 31. The method of claim *10* 30, wherein the cell is a cholinergic or adrenergic cell.

12 32. The method of claim *2* 22, wherein the cell is a retinal pigmented epithelial cell.

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- B1
cm it
- 13³⁵ The method of claim ²22, wherein the cell is a contractile cell.
- 14³⁴ The method of claim ¹³33, wherein the cell is a heart muscle cell or smooth muscle cell.
- 15³⁵ The method of claim ²22, wherein the cell is a fat cell.
- 16³⁶ The method of claim ²22, wherein the cell is a fibroblast.
- 17³⁷ The method of claim ²22, wherein the cell is a vascular endothelial cell.
- 18³⁸ The method of claim ²22, wherein the cell is a hormone secreting cell.
- 19³⁹ The method of claim ¹⁸38, wherein the cell secretes insulin or glucagon.
- 20⁴⁰ The method of claim ¹⁸38, wherein the cell is a pituitary cell, thyroid hormone secreting cell, or adrenal cell.
- 21⁴¹ The method of claim ²22, wherein the cell is a fat storing cell.
- 22⁴² The method of claim ²22, wherein the cell is an epithelial or mucosal cell.
- 23⁴³ The method of claim ²²42, wherein the cell is an oral cavity cell, stomach cell, or intestinal cell.
- 24⁴⁴ The method of claim ²²42, wherein the cell is a mammary gland, uterus, or prostate cell.
- 25⁴⁵ The method of claim ²²42, wherein the cell is an air space epithelial cell of the lung.

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~~26~~⁴⁶. The method of claim ~~22~~², wherein the cell is a tubular cell of the kidney.

~~27~~⁴⁷. The method of claim ~~22~~², wherein the cell is a blood cell or a cell of the immune system.

~~28~~⁴⁸. The method of claim ~~47~~²⁷, wherein the cell is a T or B lymphocyte.

~~29~~⁴⁹. The method of claim ~~47~~²⁷, wherein the cell is a mast cell or eosinophil.

~~30~~⁵⁰. The method of claim ~~47~~²⁷, wherein the cell is a monocyte or macrophage.

~~31~~⁵¹. The method of claim ~~22~~², wherein the cell is an osteoblast, osteocyte, or osteoclast.

~~32~~⁵². The method of claim ~~22~~², wherein the cell is a chondrocyte or synovial cell.

~~33~~⁵³. The method of claim ~~22~~², wherein the cell is a stem cell.

~~34~~⁵⁴. The method of claim ~~53~~³³, wherein the cell is an embryonic stem cell.

~~35~~⁵⁵. The method of claim ~~53~~³³, wherein the cell is an embryonic germ cell.

~~36~~⁵⁶. The method of claim ~~53~~³³, wherein the cell is an adult stem cell.

57. The method of claim 22, wherein the polynucleotide encodes a full-length, naturally occurring human telomerase reverse transcriptase.

58. The method of claim 22, wherein the polynucleotide encodes a human telomerase reverse transcriptase having the amino acid sequence of SEQ ID NO:2. --